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ABSTRACT

This study investigated whether or not preschoolers can learn novel words when viewing television. A total of 61 preschool children, ages 3 and 5, were assigned to either an experimental or control group. A 15-minute television program was prepared with two different voice-over narrations. The experimental version featured 20 different novel words, five each in the four categories of object, action, attribute, and affective state words. The control version was the same except that familiar words were substituted for the novel words. Subjects viewed the program on two occasions. Comprehension was tested before and after viewing. The Peabody Picture Vocabulary Test - Revised (PPVT-R) was administered prior to viewing as an index of general vocabulary learning ability. Results indicated that, when pre-test comprehension and PPVT-R scores were controlled, the experimental group performed better than the controls on the total post-viewing comprehension score. Group differences were apparent for object, action, and attribute words. The 5 year olds were more accurate than the 3 year olds on the total score and object and attribute words. The easiest words to learn were object and attribute words. Generally, findings confirm the everyday observation that preschoolers can "pick up" new words with a minimum of exposure and a minimum of tutorial assistance. (Author/RH)

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Lessons From Television:
Children's Word Learning When Viewing

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Abstract

The study investigated whether or not preschoolers can learn novel words when viewing television. Sixty-one preschoolers, ages 3 and 5, were assigned to either an experimental or control group. A 15-minute television program was prepared with two different voice-over narrations. The experimental version featured 20 different novel words, five each in the four categories of object, action, attribute, and affective state words. The control version was the same except that familiar words substituted for the novel words. The children viewed the program on two occasions. Comprehension was tested before and after viewing. The Peabody Picture Vocabulary Test - Revised (PPVT-R) was administered prior to viewing as an index of general vocabulary learning ability. The experimental group performed better than the controls on the total post-viewing comprehension score, controlling for pre-test comprehension and PPVT-R scores. Group differences were apparent for object, action, and attribute words. The 5-year-olds were more accurate than the 3-year-olds on the total score and object and attribute words. The easiest words to learn were object and attribute words. The findings support a "fast mapping" of novel words in the viewing situation.

Lessons From Television

Children's Word Learning When Viewing

Television viewing is a favorite activity of young children. Contemporary models of viewing characterize the child as an active processor of the medium, one who selectively attends, searches for comprehensible content, and retains new information from viewing (cf. Rice, Huston, & Wright, 1982). A number of possible consequences of viewing have been explored, most predominantly changes in social behavior and concept learning. One area of potential consequence that has yet to be investigated is language learning. This paper is a report of an experimental study of children's word learning in a laboratory viewing situation.

During the preschool years children quickly acquire an extensive vocabulary. Between the ages of 1 1/2 and 6 years, children learn to comprehend over 14,000 words (Templin, 1957), or an average of about nine new words per day. Obviously, children manage to do so without explicit word-by-word tutoring. Instead, they seem to absorb new meanings as they encounter them in conversational interactions. The exact nature of the word learning process is not clear. Current models are sketchy and rely heavily on simplifying assumptions. For example, Pinker (1984, p. 30) states that children notice single words in

isolation, or emphatically stressed single words, or simple uncomprehended words in a sentence (when there is only one such word), and pair the words with a predicate corresponding to "an entity or relation that is singled out ostensively, one that is salient in the discourse context, or one that appears to be expressed in the speech act but for which there is no known word in the sentence expressing it." The model assumes that children rely upon situations where a single unfamiliar word is isolated or surrounded by known linguistic contexts, and the situation provides a clear meaning for the word. In some unspecified manner the child infers the match-up between word and meaning.

The context for learning words that is emphasized in the language acquisition literature is that of a dyadic interchange between an adult and a child. Television as a possible source of language learning is generally overlooked or summarily dismissed (cf. Clark & Clark, 1977, p. 330; Hoff-Ginsberg & Shatz, 1982), even though by age 3 years, American children are frequent television viewers, averaging more than 2 1/2 hours of viewing daily (Huston, Wright, Kerkman, Seigle, Rice, & Bremer, 1983). Furthermore, young children's viewing is attentive. In the home situation, when the TV is on children increase the percentage of time looking at the screen from 6% at

age 1 to 67% at age 3-4, and 70% for 5- to 6-year-olds (Anderson, Lorch, Field, Collins, & Nathan, 1986). Given frequent, attentive viewing, the medium is potentially a major source of verbal information for preschool children.

Some popular educational programs, Sesame Street and Mr. Rogers' Neighborhood, offer dialogue that is simplified much like mothers' speech to children. The dialogue has a simple grammar, refers to immediately present referents, explicitly focuses on key words, and involves frequent repetitions of form and content. Furthermore, the content expressed in key terms is often supported by close-ups and other salience-enhancing visual production techniques (Rice, 1984; Rice & Haight, 1986).

In home settings parents intuitively respond to the medium as a language-teaching device for their toddlers who view. Parents use television, particularly Sesame Street, as a talking picture book. They point out people and things, provide verbal labels, and encourage their child to label and talk about the characters and actions, and to respond to characters' invitations to the viewers to sing along or answer questions. In turn, children as young as 18-24 months label what they see on television, ask questions, repeat what they hear, and relate what they see to what they experience in the real world (Lemish & Rice, 1986). Overall, when embedded in supportive

parental interactions, educational television viewing appears to be a situation well suited to language acquisition.

In summary, young children are frequent viewers, their favorite programs have comprehensible dialogue, and their parents tend to talk with them about their viewing, all of which favor the possibility that children learn new words while viewing. Recent longitudinal evidence is also supportive (Rice, Huston, & Truglio, in preparation). A sample of 325 children, approximately half of whom were 2 1/2 years and half were 4 1/2 years at the beginning of the study, were followed for 2 years. The Peabody Picture Vocabulary Test-Revised (Dunn & Dunn, 1981) was given to the children at the beginning and the end of the study. Home viewing diaries were collected at intervals during the 2 years. Viewing educational television programs, primarily Sesame Street, predicted final PPVT scores for the younger children (spanning 2 1/2-4 1/2 years of age), whereas initial PPVT was not a significant predictor of final viewing. This effect was not apparent for other kinds of viewing, such as cartoons, nor was it evident for the older children.

How could young children learn about language when viewing television? On the one hand, the medium is a passive experience. The viewer must process what is

presented in real time; no adjustments are made for a child's questions or momentary shifts in attention. This situation contrasts with the dyadic, child-centered characteristics of live adult-child interactions that have been emphasized as helpful for language acquisition (e.g., Snow, 1984).

On the other hand, recent studies document that preschool children can learn new words on the basis of a single exposure, a phenomenon referred to as "fast mapping" (Apel, Kamhi, & Dollaghan, 1985; Carey & Bartlett, 1978; Dickinson, 1984; Dollaghan, 1985). Fast mapping consists of a quick, initial partial understanding of a word's meaning, involving a restructuring of the lexicon and restructuring of the underlying conceptual domain (Carey, 1978). The redundant, multiple exposures of key words in educational programs could be conducive to some form of fast mapping.

Carey and Bartlett's (1978) first informal study of fast mapping was followed by two recent experimental studies (Dickinson, 1984; Dollaghan, 1985). Evidence of fast mapping was reported in all three studies, for children ranging in age from 2 years to 6th grade. The targeted words were either nouns (object names) or object attributes (color, weight); the total number of new words presented was limited to no more than three; and the total

number of presentations was limited to a few (e.g., once or twice). Evidence of partial mapping was drawn from a variety of measures: comprehension, production, recognition of the novel word as one heard before, definition of the word, or judgment of correct use in a sentence.

The fast mapping studies are limited in three respects: First, a single exposure is a very conservative, minimal learning situation, unlike many naturalistic settings such as television and live interactions where key vocabulary items tend to appear several times. Second, the limited kinds of words sampled, object and object-attribute words, constrains the generalizability of the findings. Given that there are differences in which kinds of words that children find easy to learn (Benedict, 1979; Nelson, 1973), it may be that some word categories are more amenable to fast mapping than are others. Furthermore, the process of fast mapping may be clarified by differences between different kinds of words. Finally, in the previous studies there was no attempt to investigate developmental trends within the preschool age range, the years between 3 and 5 when rapid vocabulary acquisition occurs.

This study addressed three questions:

1. Do preschool viewers learn word meanings when viewing television?

2. Are some kinds of word meanings more amenable to TV-modeling than others?

3. Are there age differences in the effectiveness of television as a source of language information?

Method

Design

A 3-way mixed design (2 [age] X 2 [viewing condition] X 4 [word]) was followed. Age and condition were the between group factors, with predicted advantages for higher age (5s > 3s) and for the experimental condition (experimentals > controls). The within-group repeated factor was the kind of word meanings depicted: object words, action words, attribute words, and affective state words. The four kinds of word meanings were chosen because they indicate ontogenetic trends in acquisition: object words appear first, followed by actions, and then modifiers (Benedict, 1979; Nelson, 1973). Affective state words, such as sad or angry appear later (Bretherton, McNew, & Beeghly-Smith, 1981). This ontogenetic sequence has been ascribed to children's conceptual understandings (Benedict, 1979; Nelson, 1973) and to patterns of

syntactic structures (Gentner, 1982). It may be that television viewing is well suited to the presentation of some meanings, such as objects, actions, and attributes, insofar as the camera can focus attention on targeted objects or actions and targeted information can be reiterated. On the other hand, some meanings, such as affective state words, may require presentation in an immediate, interpersonal situation. It was predicted that order of word difficulty, from easiest to most difficult, would be: object, action, attribute, and affective state words.

Subjects

The subjects were 61 normally developing children, 27 3-year-olds and 34 5-year-olds with equal distribution of sexes across age level. The subjects were randomly assigned to experimental (N = 35) or control (N = 26) groups. Each subject tested within or above normal range on the Peabody Picture Vocabulary Test-Revised (Dunn & Dunn, 1981) and did not have a history of hearing loss. Subjects were drawn from students enrolled in local day care or preschool centers.

Materials

Two 6-minute animated television programs (one with a bug as a central character and the other with a mole as the lead) were selected as the stimuli because they met

the following characteristics: no narration or dialogue, clearly depicted actions and characters, a total length not exceeding 15 minutes, and a series of actions amenable to a story narration. To differentiate the programs, a 10-second animated bit was edited and inserted between the programs.

Voice-over narration was added to each program. The narration was a story containing 20 target words, five from each of the four word-meaning categories. Words were selected which afforded equivalent meanings in experimental and control pairings. Determination of words within categories was straightforward for names of objects and actions. Attributes included person attributes and object attributes, in order to match a script to the program content. Affective words described emotional states. As Bretherton, Fritz, Zahn-Waxler, and Ridgeway (1986) note, clear theoretical criteria for emotion-denoting words are not available and clear precedents for selection are not evident in the literature. The words are listed in Table 1.

Insert Table 1 about here

The experimental words were ones which did not appear in adults' spontaneous conversations with 4 1/2-year-old

children (Hall, Nagy, & Linn, 1984), and were not known by children ages 3 and 5 in pilot testing. The control words were similar in meaning and familiar to preschoolers. Each targeted word appeared five to eight times within a 6- to 7-minute period, a rate consistent with the rate of targeted words presented in educational programs (Rice & Haight, 1986). Within the programs, the targeted words were presented in the following manner. They were (a) nested within a single program (i.e., a given word appeared only in one program), (b) they were used in a story context, and (c) they were repeated as recasts of earlier contexts. The programs containing the control words were identical to the experimental programs except for the substitution of the control words for the experimental words.

Procedure

The research procedure consisted of three 15-minute sessions for each subject with the sessions spaced 1 week apart. In the first session two measures were collected. One was the PPVT-R (Dunn & Dunn, 1981) to serve as an index of vocabulary acquisition. The other was a pretest on the comprehension test to determine if there were unintended differences between the experimental and control groups in initial comprehension of the targeted words. The comprehension test followed the format of the

PPVT-R. Four pictures were arrayed on a page and children were asked to point to the picture depicting the word named. The pictures were taken of the word content within the television programs as they were played on a video screen. Each four-picture array contained pictures from the same program. Each word was tested once, for a total of 20 items.

Children viewed the video stimuli in Sessions 2 and 3 at least 1 day and no more than 1 week apart. Each child viewed individually, with an experimenter in the room. The child was told to watch carefully because the experimenter would ask questions about the TV programs later. If the child initiated conversation, the experimenter was nonresponsive, except for encouraging the child to view carefully. Immediately following the second viewing, the posttest was presented, consisting of the same comprehension tests and procedures as the pretest.

Results

The cell means and standard deviations for the control and experimental 3- and 5-year-olds for the pre- and post-test total scores (possible of 20), post-test individual word category subtotals, and PPVT-R standard scores are reported in Table 2.

Insert Table 2 about here

Preliminary Analyses

Univariate ANOVAs indicated no condition, age, or sex effects for the comprehension pretest and PPVT-R scores, indicating that the groups were equivalent for initial comprehension of the experimental words and overall vocabulary acquisition level. Univariate ANOVAs (age by group by order; age by group by sex) indicated no order or sex effects for the post-test scores (total and individual word categories).

Group Comparisons

In order to determine condition or age group effects, a two-way analysis of covariance (age by condition) was run on the post-viewing total comprehension score, controlling for general vocabulary level (PPVT-R standard scores) and initial comprehension levels (pretest total score). The PPVT-R was a significant covariate ($F(1, 56) = 10.885$, $p < .01$), whereas the pretest total score was not. There were significant condition effects ($F(1, 56) = 52.671$, $p < .001$), age effects ($F(1, 56) = 20.099$, $p < .001$) and an age by condition interaction ($F(1, 56 = 6.859$, $p = .01$). The experimental group had higher scores than the controls; the 5-year-olds higher than the 3-year-

olds. The 5-year-olds benefited more from the experimental condition than did the 3-year-olds.

A multivariate analysis of covariance (age by condition) with PPVT-R as covariate, was run on the four word categories post-viewing subtotal comprehension scores in order to take into account the interrelationship among the individual word categories. The results are reported in Table 3. There were main effects for condition, age,

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Insert Table 3 about here

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and an age by condition interaction. Univariate ANOVAs for the individual word categories indicate condition effects (experimentals > controls) for object, action, and attribute words; age effects (5s > 3s) for object and attribute words; and no age by condition interactions for any of the individual word categories. Unlike the univariate ANCOVA on the total comprehension score, PPVT-R was not a significant covariate in the MANCOVA ($\underline{F}(4, 53) = 2.31$, $\underline{p} < .10$), although in the associated univariate ANCOVAs for object and attribute words PPVT-R was significant ($\underline{F}(1, 56) = 4.76$, $\underline{p} < .05$ and $\underline{F}(1, 56 = 3.79$, $\underline{p} = .05$, respectively). Overall, the findings indicate experimental effects in the predicted direction for the total comprehension score, object, action, and attribute

words, and superiority for 5-year-olds for object and attribute words, independent of overall vocabulary level (PPVT-R).

Word Item Analyses

Item analyses were conducted on the post-viewing comprehension scores of the experimental group to determine the coherence of the word groupings and the relative acquisition levels of individual items. The zero order correlations of individual items with word group totals are reported in Table 4. In general, the patterns of

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Insert Table 4 about here

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correlations indicate internal cohesion within each of the four categories, with significant correlations between individual items and the category total. The only cross-category correlations are between three of the attribute words and the object word total, indicating a close relationship between attribute and object words.

The accuracy level of the words was determined by the percent of subjects who were correct. For the word groups, the percentages and ranges were as follows: Object, 59%, 34-94%; action, 38%, 31-46%; attribute, 57%, 34-83%; affective, 32%, 20-49%. The easiest individual words were the same for both age groups. They are as

follows, with their respective total percent correct: Grammophone, 94%; nurturant, 83; viola, 71; makeshift, 69; malicious, 66; artisan, 57. Fabricating, 46%, was also in the top 10 words for both ages. Otherwise, the relative rankings within the bottom 10 words varied for the two age groups, with the exception that altruism (23% combined) and contentment (20% combined) were at the bottom for both. The easiest words were object or attribute words, lending support to the correlations suggesting close relationships between object and attribute words.

Discussion

The findings indicate that young children are able to learn novel object, action, and attribute words in a viewing situation. Furthermore, the viewing effects were evident when the children's overall vocabulary levels were controlled, indicating that possible viewing effects are not limited to children with relatively advanced vocabularies. For object and attribute words, 5-year-olds benefited more from the viewing situation than the 3-year-olds, suggesting possible influences of accumulated linguistic knowledge and/or prior viewing experience.

Given the nature of the stimuli and the viewing circumstances, the findings suggest a robust initial word acquisition mechanism. In contrast with the carefully focused and limited scope of earlier fast mapping studies,

the experimental stimuli presented 20 novel words in a relatively brief time, in a format that allowed for minimal parsing support or time for reflection. With five to eight instances of each word, a total of 100-160 novel bits of information (and, inadvertently, perhaps even more) appeared in a 12-minute program. Furthermore, the same carrier phrase was not used for individual tokens of a targeted word. Compared with the earlier studies, these findings indicate that in order to be learned the targeted word is not restricted to a single "new" item, surrounded by the familiar; the new word need not be introduced in exaggerated referent-matching situations; the new word is not limited to novel objects or members of a limited semantic class (such as color terms); nor is it necessary to provide the same linguistic context for each presentation of the new word. In short, a minimum of overt salience-enhancing support is adequate for children to parse a new word and arrive at an initial comprehension of meaning. The simplifying assumptions of contemporary explanatory models are not requirements for young word learners.

These conclusions must be qualified by the finding that some kinds of word meanings are more readily mapped than others. As predicted, object, action, and attribute words were amenable to quick comprehension. On the other

hand, affective state words were relatively resistant to quick interpretation. Two factors seem to be implicated: the conceptual domain involved and the grammatical function of the word types. The relative ease of mapping for object, action, and attribute words is consistent with young children's ontogenetic patterns of word acquisition.

On the other hand, the relative intractability of affective words is not solely attributable to the conceptual domain labeled. It may well be that the same notions would be mappable if they were consistently presented in the modifier position instead of as affective state terms in differing grammatical contexts, as they were in the script. This conclusion is suggested by the fact that the experimental attribute words nurturant and malicious seem to have conceptual similarities with the affective words altruism and dejection, yet the former were easy to learn and the latter were difficult. They were not correlated with each other and indicated differential effectiveness in the experimental situation. The difference may be attributable to grammatical context. Malicious and nurturant always appeared in the following grammatical pattern: article, optional modifier, malicious worm(s); article, optional modifier, nurturant artisan. This grammatical regularity, with the cues provided by the article at the beginning of the phrase and

the optional initial modifier, would help a child identify the grammatical role, and putative meaning, of the unfamiliar adjective and noun, according to a structure-dependent distributional learning model (Carey, 1982; Maratsos & Chalkley, 1981). In contrast, dejection and altruism appeared in several grammatical contexts. For example, dejection appeared in the following structures: "looks/feels dejected," "the dejection," and "look of dejection." Because words describing emotional states can appear in a variety of grammatical roles (Bretherton et al., 1986; Johnson-Laird, 1983), and we wished to minimize overlaps with the attribute and action categories, the rule used in writing the scripts was to avoid the modifier and verb positions for affective words as much as possible. The result was a variety of mostly noun uses. The combination of grammatical variability and conceptual abstraction in the case of affective words may have been too challenging for a fast mapping in the viewing situation.

Overall, these young viewers were able to engage in rapid on-line processing of the narration that involved noting the presence of a new word and arriving at an instantaneous attribution of meaning. It is not possible to isolate unambiguously the features of the stimuli that accounted for this quick learning. A prime candidate,

however, is the number of repetitions, coupled with clear, although not exaggerated, depiction of putative meanings. The repetitions were similar to what Baker and Nelson (1984) describe as recasts and Hoff-Ginsberg (1986) describes as a self-repetition (i.e., they involved repetition of targeted words in similar but not identical grammatical contexts). Baker and Nelson (1984) report that preschoolers who heard recasts of the experimenter's utterances acquired targeted new syntactic forms. Likewise, Hoff-Ginsberg (1986) reports that one of three significant predictors of young children's syntactic growth was mothers' self-repetitions, most of which were partial or modified repetitions.

The findings confirm the everyday observation that preschoolers can "pick up" new words with a minimum of exposure and a minimum of tutorial assistance. The results support the prediction that young viewers can learn new words when watching television, given an appropriate script. What remains to be determined is how children attend to the stream of words presented, identify a novel item, enter it into their available lexicons, assign it a tentative meaning, and store it for later use, all on the basis of a few fleeting presentations. Video stimuli promise a means of disentangling the multivariate influences evident in a naturalistic communicative

setting. As we identify the factors which contribute to the effectiveness of a video presentation, we will also determine the features that contribute to children's language learning. These features can then be incorporated into broadcast programming or special tutorial videocassettes, a possibility to gladden the heart of the many parents who wish the appeal of the medium matched its value for their children's development.

References

Anderson, D. R., Lorch, E. P., Field, D. E., Collins, P. A., & Nathan, J. G. (1986). Television viewing at home: Age trends in visual attention and time with TV. Child Development, 57, 1024-1033.

Apel, K., Kamhi, A., & Dollaghan, C. (1985, November). Fast mapping skills in young children: Name that word. Paper presented at the American Speech-Language-Hearing Association annual convention, Washington, DC.

Baker, N. D., & Nelson, K. E. (1984). Recasting and related conversational techniques for triggering syntactic advances by young children. First Language, 5, 3-22.

Benedict, H. (1979). Early lexical development: Comprehension and production. Journal of Child Language, 6(2), 183-200.

Bretherton, I., Fritz, J., Zahn-Waxler, C., & Ridgeway, D. (1986). Learning to talk about emotions: A functionalist perspective. Child Development, 57, 529-548.

Bretherton, I., McNew, S., & Beeghly-Smith, M. (1981). Early person knowledge as expressed in gestural and verbal communication: When do infants acquire a

"theory of mind"? In M. E. Lamb & L. R. Sherrod (Eds.), Infant social cognition. Hillsdale, NJ: Erlbaum Associates.

Carey, S. (1978). The child as word learner. In M. Halle, G. Miller, & J. Bresnan (Eds.), Linguistic theory and psychological reality. Cambridge, MA: The MIT Press.

Carey, S. (1982). Semantic development: The state of the art. In E. Wanner & L. R. Gleitman (Eds.), Language acquisition: The state of the art. Cambridge, England: Cambridge University Press.

Carey, S., & Bartlett, E. (1978). Acquiring a single new word. In Papers and Reports on Child Language Development (Stanford University), 15, 17-29.

Clark, H., & Clark, E. (1977). Psychology and language. New York: Harcourt, Brace, Jovanovich.

Dickinson, D. K. (1984). First impressions: Children's knowledge of words gained from a single experience. Applied Psycholinguistics, 5(4), 359-374.

Dollaghan, C. (1985). Child meets word: "Fast mapping" in preschool children. Journal of Speech and Hearing Research, 28, 449-454.

Dunn, L., & Dunn, L. (1981). Peabody Picture Vocabulary Test-Revised. Circle Pines, MN: American Guidance Service.

Gentner, D. (1982). Why nouns are learned before verbs: Linguistic relativity versus partitioning. In S. Kuczaj (Ed.), Language development (Vol. 2): Language, thought and culture. Hillsdale, NJ: Lawrence Erlbaum Associates.

Hall, W. S., Nagy, W. E., & Linn, R. (1984). Spoken words: Effects of situation and social group on oral word usage and frequency. Hillsdale, NJ: Lawrence Erlbaum.

Hoff-Ginsberg, E. (1986). Function and structure in maternal speech: Their relation to the child's development of syntax. Developmental Psychology, 22, 155-163.

Hoff-Ginsberg, E., & Shatz, M. (1982). Linguistic input and the child's acquisition of language. Psychological Bulletin, 92, 3-26.

Huston, A. C., Wright, J. C. Kerkman, D., Seigle, J., Rice, M., & Bremer, M. (1983, April). Family environment and television use by preschool children. Paper presented at the biennial convention of the Society for Research in Child Development, Detroit.

Johnson-Laird, P. N. (1983). Mental models. Cambridge, MA: Harvard University Press.

Lemish, D., & Rice, M. (1986). Television as a talking picture book: A prop for language acquisition. Journal of Child Language, 13, 251-274.

Maratsos, M. P., & Chalkley, M. (1981). The internal language of children's syntax: The ontogenesis and representation of syntactic categories. In K. Nelson (Ed.), Children's language (Vol. 2). New York: Gardner Press.

Nelson, K. (1973). Structure and strategy in learning to talk. Monographs of the Society for Research in Child Development, 38, (1-2, Serial No. 149).

Pinker, S. (1984). Language learnability and language development. Cambridge, MA: Harvard University Press.

Rice, M. L. (1984). The words of children's television. Journal of Broadcasting, 28(4), 445-461.

Rice, M. L., & Haight, P. L. (1986). The "motherese" of Mr. Rogers: The dialog of educational television programs. Journal of Speech and Hearing Disorders, 51, 282-287.

Rice, M. L., Huston, A. C., & Truglio, R. (in preparation). Words from Sesame Street: Vocabulary learning while viewing.

Rice, M. L., Huston, A. C., & Wright, J. C. (1982). The forms of television: Effects on children's attention,

comprehension, and social behavior. In D. Pearl, L. Bouthilet, & J. Lazar (Eds.), Television and behavior: Ten years of scientific progress and implications for the eighties. Washington, DC: U.S. Government Printing Office.

Snow, C. E. (1984). Parent-child interaction and the development of communicative ability. In R. L. Schiefelbusch & J. Pickar (Eds.), Communicative competence: Acquisition and intervention (pp. 69-108). Baltimore: University Park Press.

Templin, M. C. (1957). Certain language skills in children. Minneapolis: University of Minnesota Press.

Table 1.

Targeted Lexical Items in TV Dialogue

Experimental		Control
Objects		
Gramophone	(M)*	Record Player
Cleaver	(M)	Knife
Vessels	(M)	Bowls
Artisan	(B)	Carpenter
Viola	(B)	Violin
Actions		
Surge	(M)	Blow
Sever	(M)	Cut
Waft	(M)	Fall
Trudge	(B)	Walk
Fabricate	(B)	Make
Attributes		
Makeshift	(M)	Pretend
Malicious	(B)	Bad
Withered	(B)	Sick
Radiant	(B)	Pretty
Nurturant	(B)	Kind
Affective State		
Altruism	(M)	Helpful
Dejection	(M)	Sad
Contentment	(M)	Feeling Good
Jubilation	(B)	Happy
Smug	(B)	Proud

*M = Mole Bit
B = Bug Bit

Table 2.

Cell Means and Standard Deviations (in parentheses): Age by Group

	3-Year-Olds		5-Year-Olds	
	Experimental	Control	Experimental	Control
Pretest Total*	6.00 (1.67)	5.63 (1.36)	5.84 (2.16)	6.33 (1.67)
Posttest Total*	7.62 [7.56]*** (1.92)	5.18 [5.60] (1.83)	10.68 [10.71] (2.16)	6.46 [6.18] (1.72)
Object Words**	2.25 [2.22] (.86)	1.27 [1.44] (1.27)	3.52 [3.54] (1.12)	1.87 [1.75] (1.06)
Action Words**	1.44 (1.09)	1.18 (.98)	2.32 (1.20)	1.27 (1.10)
Attribute Words**	2.56 [2.53] (1.26)	1.45 [1.62] (1.04)	3.11 [3.12] (1.10)	2.40 [2.29] (1.18)
Affective Words**	1.38 (1.26)	1.27 (.90)	1.74 (1.05)	.93 (.96)
PPVT-R	115.69 (9.22)	107.36 (10.28)	113.95 (14.63)	119.40 (14.04)

*Total Possible = 20
**Total Possible = 5
***Means in brackets adjusted for significant PPVT covariate

Table 3.

Significant MANCOVA Results for Post-viewing Comprehension Scores

1. Group Effect: $F(4, 53) = 13.03$, $p < .001$

   Univariate $F(1, 56)$:

   Object = 25.02 $p < .001$

   Action = 5.79 $p < .05$

   Attribute = 8.82 $p < .01$

   Affective = 3.18 $p = .08$

2. Age effect: $F(4, 53) = 4.397$, $p < .01$

   Univariate $F(1, 56)$:

   Object = 9.67 $p < .01$

   Attribute = 3.99 $p = .05$

3. Age x group interaction: $F(4, 53) = 2.525$, $p = .05$

   No significant univariate ANOVAs

Table 4.

Item Analysis: Zero Order Correlations for Posttest Individual Word Scores and Word Group Total Scores

	Total Object	Total Action	Total Attribute	Total Affective	Overall Total
Object Words					
Viola	.62***	.06	.46**	-.07	.50***
Grammaphone	.30*	-.02	-.03	.23	.22
Artisan	.60***	-.11	.19	-.02	.30*
Vessels	.55***	.25	.19	.22	.56***
Cleaver	.54***	.30*	.19	-.07	.45**
Action Words					
Trudging	.19	.61***	.08	.04	.44**
Severing	.03	.05	.19	-.21	.04
Wafting	.24	.69***	-.15	0	.37**
Surging	-.01	.49***	-.05	-.26	.09
Fabricating	.04	.64***	-.03	-.16	.24
Attribute Words					
Malicious	.43**	.05	.73***	.11	.51***
Nurturant	.37**	.03	.46**	-.04	.38**
Make-shift	-.09	-.05	.28*	.07	.10
Radiant	.40**	-.05	.55***	-.10	.37**
Withered	-.02	.05	.55***	-.21	.18
Affective State					
Jubilant	-.11	-.23	0	.57***	.09
Smug	-.001	-.22	-.17	.57***	.07
Dejection	.20	.04	-.21	.63***	.30*
Contentment	.02	-.08	-.12	.32*	.06
Altruism	.08	-.07	.12	.39**	.24

(table continues)

Table 4 (cont'd)

	Total Object	Total Action	Total Attribute	Total Affective	Overall Total
Post Object		.16	.49***	.05	.79***
Post Action			.07	-.10	.49***
Post Attribute				-.12	.66***

p = < .001***
< .01**
< .05*